IDAHO
DEPARTMENT OF FISH AND GAME

Jerry M. Conley, Director

PAHSIMEROI HATCHERY

Annual Report

1 October 1982 - 30 September 1983

by

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Fish Hatchery Superintendent II

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Pahsimeroi Hatchery

ABSTRACT

A total of 109 summer chinook salmon were collected during the summer of 1983. Forty-five females were spawned for a total of 261,188 green eggs.

A total of 232 spring chinook salmon were collected during the summer of 1983 at Hayden Creek trap and transported to the Pahsimeroi Hatchery. Seventy-five females were spawned for a total of 279,398 green eggs.

A total of 437,332 five-inch spring chinook and 13,690 five-inch summer chinook smolts were released from rearing ponds in March, 1983. They averaged 22 per pound when released.

A new record for numbers of steelhead returning to the hatchery was set this year, with 4,572 A group and 436 B group adults, making a total of 5,008.

A group adult steelhead, totalling 2,486, were hauled to other streams to spawn naturally.

A group green eggs, totalling 7,320,024, and B group, totalling 1,782,528, were taken in the spring of 1983. The eye-up was 72% for A group and 80.4% for B group.

A group fry, totalling 851,250, and 708,000 B group fry were stocked in various streams in upper Salmon River.

Fingerlings from A group, totalling 78,423, were stocked in Basin Creek and W.F. Yankee Fork River.

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Fish Hatchery Superintendent II

OBJECTIVES

The objectives of the Pahsimeroi Hatchery are to:

1. Provide a release point for 200,000 pounds of 7- to 12-inch steelhead smolts from Niagara Springs Hatchery.

2. Collect up to nine million eggs from adult steelhead when they return from the ocean two to three years later.

3. Incubate eggs until eyed and ship two million eyed eggs to Niagara Springs Hatchery.

4. Hatch remainder of eggs and redistribute fry to streams in area for natural rearing.

5. Trap returning spring and summer chinook salmon.

6. Spawn salmon, eye and hatch the eggs and rear up to one million salmon smolts.

7. Release the salmon smolts into the river and collect adults two to three years later when they return from the ocean.

INTRODUCTION

Pahsimeroi Hatchery is located near Ellis, Idaho, on the Pahsimeroi River. It receives its water directly from the Pahsimeroi River and from a series of springs nearby. The incubators can be supplied with either river water or 52°F spring water.

The fish trap consists of three concrete pens measuring 15' x 75' x 3.5' deep. Fish are held in these pens until they are ripe and the eggs can be taken. The trap has a series of ladders into the structure and a specially built metal weir grate that keeps the fish from leaving the holding pen. A weir structure 55' long crosses the Pahsimeroi River to channel the arriving fish into the trap facility.

Near the trap facility are located a residence for the hatchery superintendent, two pumphouses, a 10,000 gallon water storage tank, two 10 x 50 mobile homes, _a metal shop building, a cinderblock building used for an office, public restrooms and an incubator room with capacity for 20 Heath incubation cabinets. Four concrete raceways (4' x 100') are used to start salmon and steelhead fry.

Two dirt rearing ponds (40' x 500') are located six miles above the trap at a separate facility and will be used to rear and release the chinook salmon smolts.

This facility consists of a residence, a small metal storage building, a feed bin to hold dry feed and a walk-in freezer to hold frozen salmon feed.

Table 1. Summer chinook weir count.

Dates of incoming fish:

June 7, 1983, to September 30, 1983

Numbers of summer chinook returns:

Males	44
Females	57
Jacks	8
Total	109

Holding Pond Mortality:

Males	5
Females	11
Total	16

Prespawning Mortality: 14.6%

Size of Fish Trapped:

Length	Males	Females
0-22	8	0
31	1	0
32	1	1
33	2	3
34	0	5
35	0	18
36	6	15
37	7	5
38	13	2
39	6	0
40	4	0
41	2	0
42	0	0
43	1	1
44	0	0
Total	44	57

Table 2. Summer chinook spawning information.

Dates of spawning:

August 30, 1983, through October 8, 1983

Number of females spawned:	45
Number of green eggs taken:	261,188
Number of blank eggs picked off:	20,152
Eye-up success:	92.3%
Average number of eggs per female:	5,804

Egg take history:

Date	Females	Ounces	No. p/oz.	Eggs taken
8-30	1	70	78	5,460
9-6	2	125	90	11,250
9-9	4	230	78	17,940
9-12	5	395	78	30,810
9-16	6	435	78	33,930
9-20	6	466	78	36,348
9-23	3	250	78	19,500
9-27	12	880	78	68,640
9-30	1	100	78	7,800
10-4	2	115	104	11,960
10-8	3	225	78	17,550
	45	3,291	79.3	261,188

Summer chinook smolt release:

On March 10, 1983, the drum screens and racks were pulled from the rearing pond and the smolt release was finished by March 20. The summer chinook portion amounted to 13,690 fish averaging 22 per pound and weighing 622 pounds.

Table 3. Spring chinook weir count. The spring chinook spawned at Pahsimeroi trap were transported from Hayden Creek trap near Lemhi, Idaho.

Dates of incoming fish:

Six fish were transported to Pahsimeroi trap on June 24, 1983, and the last fish was trapped on August 30, 1983.

Number of spring chinook returns:

Males	125
Females	100
Jacks	7
Total	232

Holding pond mortality:

Males	19
Females	26
Total	45

Prespawning mortality: 20%

Size of fish trapped:

Length	Males	Females
0-22	8	0
23	0	1
24	0	0
25	2	1
26	2	4
27	7	11
28	15	14
29	17	20
30	28	5
31	18	10
32	10	8
33	6	16
34	12	7
35	3	1
36	2	
37	2	1
	132	100

Table 4. Spring chinook spawning information.

Dates of spawning:

August 11, 1983, through September 16, 1983.

Numbers of females spawned:	75
Numbers of green eggs taken:	279,398
Number of blank eggs picked off:	33,476
Eye-up success:	88.1%
Average number of eggs per female:	3,725

Egg take history for spring chinook:

Date	Female	Ounce	No. p/oz.	Eggs taken
8-11	1	37	90	3,330
8-15	8	314	90	28,260
8-22	16	620	104	64,480
8-26	10	350	104	36,400
8-30	6	180	90	16,200
9-2	10	375	104	39,000
9-6	15	582	104	60,528
9-9	7	240	104	24,960
9-12	0	0	0	0
9-16	2	60	104	6,240
	75	2,758	101.3	279,398

Spring Chinook Smolt Release:

Between March 10, 1983 and March 20, 1983, 437,332 five-inch smolts were released from the rearing pond. They averaged 22 per pound and amounted to 19,878 pounds.

Table 5. Steelhead weir count.

Dates of incoming fish:

Males	1,755	A Group	153	B Group	1,908
Females	2,817	A Group	283	B Group	3,100
	4,572	A Group	436	B Group	5,008

Holding pond and spawning mortality:

Males	125
Females	5
Total	130

Fish released to spawn natural - A run:

Stream	Females	Males	Total
Pahsimeroi	175	150	325
Lemhi	365	354	719
N.F. Salmon River	100	100	200
Panther Creek	200	179	379
Sheep Creek	100	100	200
Valley Creek	90	60	150
Yankee Fork	250	263	513
Total	1,280	1,206	2,486

Table 6. Steelhead spawning information.

Dates of spawning: March 11, 1983 to May 10, 1983

Numbers of females spawned:

A Group		
One Ocean	758	21 to 25.5 inches
Two Ocean	774	25.5 to 31 inches
Total	1,532	
B Group	283	32 to 41 inches

Numbers of males spawned:

A Group		
One Ocean	175	21 to 25.5
Two Ocean	249	25.5 to 31
Total	424	
B Group	153	32 to 41 inches

Number of green eggs taken:

A Group	7,320,024
A Group	1,782,528
Total	9,102,552

Number of blank eggs picked off:

A Group	2,057,426
B Group	350,192
Total	2,407,618

Eye-up success:

A Group	72%
B Group	80.4%

Average number of eggs per female:

A Group	4,778
B Group	6,298

Table 6 cont.

Number of eyed eggs shipped:

A Group		
Niagara Hatchery		2,671,897
Hagerman National		757,944
Buhl		238,000
	Total	3,667,841
B Group		
Hagerman National		642,076
Buhl		68,800
	Total	710,876

Table 7. Steelhead fry and fingerling plants.

Fry plants from Pahsimeroi Hatchery		
Type A		
4-21-83	Slate Creek	25,000
4-21	Squaw Creek	85,000
4-21	Morgan Creek	113,220
4-21	Pahsimeroi River	167,790
4-25	N.F. Iron Creek	50,000
4-29	Iron Creek	105,240
5-02	Big Springs Creek	305,000
		851,250
Type LB		
5-25-83	Owl Creek	20,000
5-25	Pine Creek£	30,000
5-25	Indian Creek	50,000
5-26	Herd Creek	150,000
5-31	W.F. Yankee Fork	100,000
6-02	E.F. Salmon River	100,000
6-04	E.F. Salmon River	118,000
6-08	Herd Creek	90,000
6-13	Sheep Creek	24,000
6-13	Hughes Creek	26,000
		708,000
Fingerling Plants		
Type A		
9-07-83	Basin Creek	20,703
9-07	W.F. Yankee Fork	12,024
9-08	W.F. Yankee Fork	45,696
		78,423

Table 8. Steelhead smolt transfers.

Type A	
April 4, 1983 to May 3, 1983	Niagara Springs Hatchery
136,400 pounds at 3.63 per pound average = 496,140 fish	
March 28, 1983 to March 31, 1983	Hagerman National Hatchery
27,576 pounds at 3.05 per pound average = 84,194 fish	
April 18 and 19, 1983	Buhl Steelhead Hatchery
11,100 pounds at 3.66 per pound average = 40,681 fish	
Total A plant	621,015
Type B	
The B plants at Pahsimeroi hatchery have been discontinued.	

Table 9. Selective crosses made for experimental purposes.

One-ocean female x one-ocean male	148,104 green eggs
Two-ocean female x two-ocean male	208,224 green eggs
One-ocean female x two-ocean male	184,800 green eggs
Two-ocean female x one-ocean male	216,000 green eggs

The above crosses were made and the eggs were eyed and shipped to Niagara Springs for rearing. About 60,000 smolts of each group will be snout tagged and released at Pahsimeroi Hatchery in the spring of 1984. The purpose will be to determine how much role heredity has in determing whether the fish come back as one-ocean or two-ocean.

CARCASS DISPOSITION

After spawning, we gave away 2,300 steelhead carcasses to the public for consumption. This amounted to approximately 12,000 pounds of fish to eat. The majority of the recipients were retired people from this area and they made good use of the fish. They started lining up at our hatchery gate early in the morning on spawning days.

FISH HEALTH

During egg taking, green eggs are flushed with a malachite green solution to prevent fungus infection on the blank eggs.

Salmon and steelhead fry kept in the raceways are treated periodically with Benzylkrominium Chloride at the rate of 3 ppm for one hour. This prevents bacterial gill infections.

The pond salmon are treated with Benzylkronium Chloride at the rate of 3 ppm for one hour to prevent myxobacteria infections on their skins. This problem exists during April and May after ponding and disappears during the rest of the year.

The incubator water tank was disinfected with chlorine before the start of steelhead spawning. Thirty gallons of chlorine was placed in the tank and then filled with spring water. The solution was trickled through the incubation trays. This was done to prevent another outbreak of soft-shell in the eyed eggs due to bacterial infection.

The incubators were dried out before being used and then each stack was disinfected with 8 ounces of iodine immediately prior to placing eggs in them.

The green eggs for Niagara Springs Hatchery were water-hardened for 30 minutes in a 1 part of iodine to 96 parts of water solution of Argentyne Iodine to help kill IPN and IHN virus. The balance of the green eggs were water-hardened for 30 minutes in a 1/200 solution of iodine.

During steelhead spawning, the eggs were collected in a colander first to drain ovarian fluid from the eggs and then placed in the egg bucket for fertilization. The colander was disinfected between each egg bucket take.

The adult salmon this year were injected with erythromycin to help kill bacterial kidney disease. They were given 1-2 CC of a prepared erythromycin solution. The green eggs were water-hardened in a 3 ppm solution of Gallimycin poultry disinfectant that contained erythromycin.

FISH PRODUCTION

In April of 1983, 1,368,510 fry were placed in the two rearing ponds at the upper facility. One group was ponded at 485 per pound and the second group at 312 and 301 per pound. The size at the end of September, 1983, was 30 per pound for the first group and 39 per pound for the second group.

During the production year, 59,750 pounds of fish food was fed and 46,068 pounds of fish were produced. The conversion rate was 1.3. The balance of conversion is attributed to natural feed in the pond and water source.

HATCHERY PROJECTS

Two new power poles and four new yard lights were installed at the pond site during October of 1982.

Five new wooden screens were constructed for pond number one.

The kitchen in the pond residence was renovated by a local contractor. New counter tops were built and a new sink was installed. A larger area for the washer and dryer was built. New linoleum for the kitchen was laid. Insulation was placed in the attic and basement and electric heat was installed. The trap residence had a shower stall lined with plywood and then tiled.

An electrode sensing element was replaced inside the water tank. A new starter switch was installed on the river pump. The spring water pump was replaced during the steelhead spawning season and the old motor rebuilt. The check valve in the line between the pump and tank had to be replaced.

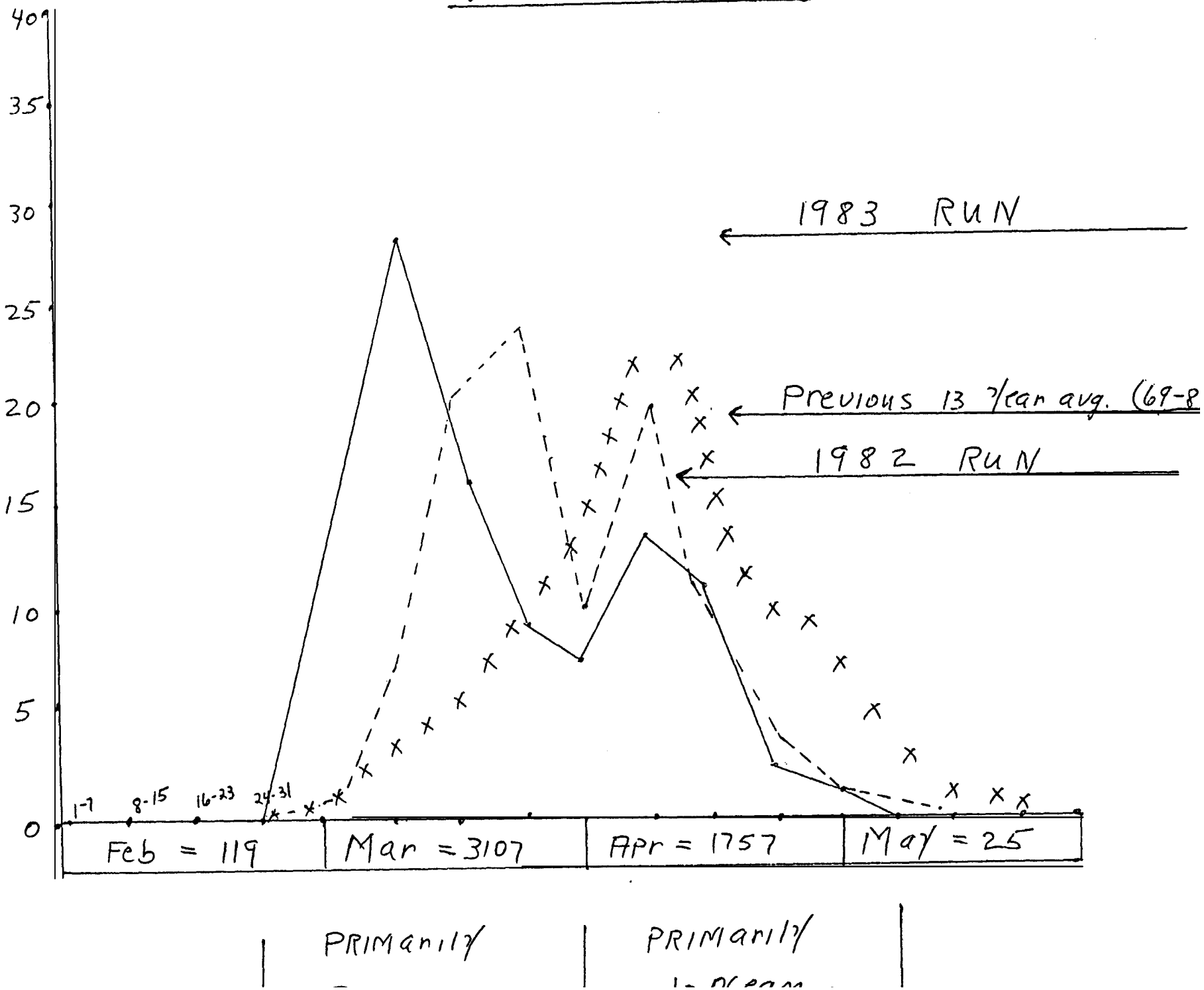
ACKNOWLEDGEMENTS

Hatchery staffing during the fish year included:

Bob Moore, Fish Hatchery Superintendent II
Brad Christensen, Fish Culturist
Julie Christensen, Temporary Laborer (months)
Arnie Miller, Temporary Laborer (6 months)

Kent Ball, Anadromous Research, took care of biological data during spawning.

In addition, help was received from different government agencies and interested sportsmen.


WEIR COUNT
40
35
30
25
20
15
10
5
0
1983 RUN
Previous 13 Year avg. (69-8
1982 RUN
1-7
8-15
16-23
24-31
Feb = 119
Mar = 3107
Apr = 1757
May = 25
PRIMARILY
PRIMARILY